

What is claimed is:

1. An oxygen scavenging composition, comprising:
 - at least one metal catalyzed oxidizable organic compound, and
 - 5 at least one transition metal carboxylate, wherein the transition metal carboxylate comprises at least one carboxylate group and wherein each carboxylate group comprises between 20 and 30 carbon atoms, inclusive.
- 10 2. The composition of claim 1, wherein the transition metal carboxylate comprises manganese, copper, or cobalt.
- 15 3. The composition of claim 1, wherein the transition metal carboxylate comprises cobalt.
4. The composition of claim 1, wherein the carboxylate group comprises 20 to 26 carbon atoms.
5. The composition of claim 1, wherein the carboxylate group comprises 20 to 22 carbon atoms.
- 20 6. The composition of claim 1, wherein the transition metal carboxylate is saturated.
7. The composition of claim 1, wherein the transition metal carboxylate comprises behenate.
- 25 8. The composition of claim 1, wherein the transitional metal carboxylate is cobalt behenate.
- 30 9. The composition of claim 1, wherein the transition metal carboxylate comprises arachidate.

10. The composition of claim 1, wherein the transitional metal carboxylate is cobalt arachidate.

5 11. The composition of claim 1, wherein the oxidizable organic compound comprises an unsaturated organic compound.

12. The composition of claim 1, wherein the oxidizable organic compound comprises carotene, ascorbic acid, squalene, or dehydrated castor oil.

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13. The composition of claim 1, wherein the oxidizable organic compound comprises an oxidizable polymer having oxidizable sites.

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14. The composition of claim 13, wherein the oxidizable polymer comprises a polyterpene or a poly(ethylene-alkyl acrylate-benzyl acrylate).

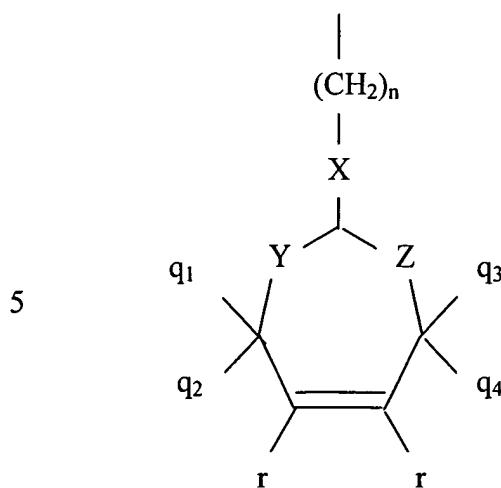
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15. The composition of claim 13, wherein the oxidizable polymer comprises polybutadiene; polyisoprene; poly(limonene); poly(meta-xylenediamine-adipic acid) (MXD6); poly(ethylene-methyl acrylate- benzyl acrylate) (EBZA); poly(ethylene- methyl acrylate-nopol acrylate) (EMNP); ethylene/methyl acrylate/cyclohexenyl methyl acrylate terpolymer (EMCM), poly(cyclohexene methyl methacrylate) (CHMA), or poly(cyclohexene methyl acrylate) (CHAA).

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16. The composition of claim 13, wherein the oxidizable polymer comprises a polymer backbone and at least one cyclic olefinic pendant group having the formula (III):
III

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10 wherein X is a linking group-; wherein n is an integer from 0 to 4, inclusive; Y is $-(CR^1R^2)_a-$, wherein a is 0, 1, or 2; and Z is $-(CR^3R^4)_b-$, wherein b is 0, 1, or 2, provided that a + b is less than or equal to 3; and q₁, q₂, q₃, q₄, r, each R¹, each R², each R³, and each R⁴ are independently selected from hydrogen; linear, branched, cyclic, or polycyclic C₁-C₂₀ alkyl; aromatic groups; halogens; amines; or sulfur-containing substituents, provided that at least one of q₁, q₂, q₃, or q₄ is hydrogen.

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17. The composition of claim 16, wherein the backbone is ethylenic.

18. The composition of claim 16, wherein the oxidizable polymer is poly(ethylene/vinyl cyclohexene) (EVCH).

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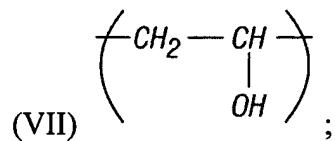
19. The composition of claim 16, wherein X comprises:

-O-(CHR⁵)_m-; -C(=O)-O-(CHR⁵)_m-; -NH-(CHR⁵)_m-; -O-C(=O)-(CHR⁵)_m-; -C(=O)-NH-(CHR⁵)_m-; or -C(=O)-O-CH(OH)-CH₂-O-;

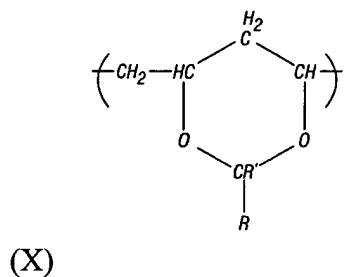
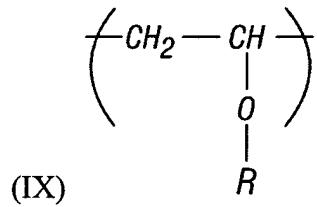
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wherein each R⁵ is independently selected from hydrogen, methyl, ethyl, propyl, or butyl; and m is an integer from 0 to 12, inclusive.

20. The composition of claim 13, wherein the oxidizable polymer comprises, 30 structure VII



and at least one structure comprising structure IX or structure X:



5 wherein -R can independently comprise an unsubstituted hydrocarbon moiety comprising at least one alpha hydrogen or a substituted hydrocarbon moiety comprising at least one alpha hydrogen, and R' can independently comprise hydrogen, an unsubstituted hydrocarbon moiety or a substituted hydrocarbon moiety.

10 21. A packaging article, comprising:

an oxygen scavenging layer comprising (a) at least one metal catalyzed oxidizable organic compound, and (b) at least one transition metal carboxylate, wherein the transition metal carboxylate comprises at least one carboxylate group and wherein each carboxylate group comprises between 20 and 30 carbon atoms, inclusive.

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22. The packaging article of claim 21, wherein the transition metal carboxylate comprises manganese, copper, or cobalt.

20 23. The packaging article of claim 21, wherein the transition metal carboxylate comprises cobalt.

24. The packaging article of claim 21, wherein the carboxylate group comprises 20 to 22 carbon atoms.

5 25. The packaging article of claim 21, wherein the transition metal carboxylate is saturated.

26. The packaging article of claim 21, wherein the transitional metal carboxylate is cobalt behenate.

10 27. The packaging article of claim 21, wherein the transitional metal carboxylate is cobalt arachidate.

15 28. The packaging article of claim 21, wherein the oxidizable organic compound comprises an unsaturated organic compound.

29. The packaging article of claim 21, wherein the oxidizable organic compound comprises an oxidizable polymer having oxidizable sites.

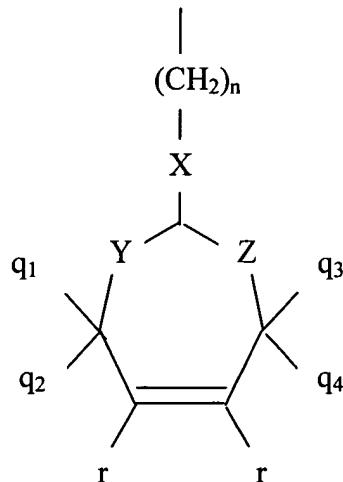
20 30. The packaging article of claim 29, wherein the oxidizable polymer comprises polybutadiene; polyisoprene; poly(limonene); poly(meta-xylenediamine-adipic acid) (MXD6); poly(ethylene-methyl acrylate- benzyl acrylate) (EBZA); poly(ethylene- methyl acrylate-nopol acrylate) (EMNP); ethylene/methyl acrylate/cyclohexenyl methyl acrylate terpolymer (EMCM), poly(cyclohexene methyl methacrylate) (CHMA), or 25 poly(cyclohexene methyl acrylate) (CHAA).

31. The packaging article of claim 29, wherein the oxidizable polymer comprises a polymer backbone and at least one cyclic olefinic pendant group having the formula (III):

III

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wherein X is a linking group; wherein n is an integer from 0 to 4, inclusive; Y is $-(CR^1R^2)_a-$, wherein a is 0, 1, or 2; and Z is $-(CR^3R^4)_b-$, wherein b is 0, 1, or 2, provided that a + b is less than or equal to 3; and q₁, q₂, q₃, q₄, r, each R¹, each R², each R³, and each R⁴ are independently selected from hydrogen; linear, branched, cyclic, or polycyclic C₁-C₂₀ alkyl; aromatic groups; halogens; amines; or sulfur-containing substituents, provided that at least one of q₁, q₂, q₃, or q₄ is hydrogen.

32. The packaging article of claim 31, wherein the backbone is ethylenic.

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33. The packaging article of claim 31, wherein the oxidizable polymer comprises poly(ethylene/vinyl cyclohexene) (EVCH), ethylene/methyl acrylate/cyclohexenyl methyl acrylate terpolymer (EMCM), poly(cyclohexene methyl methacrylate) (CHMA), and poly(cyclohexene methyl acrylate) (CHAA).

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34. The packaging article of claim 31, wherein X comprises:

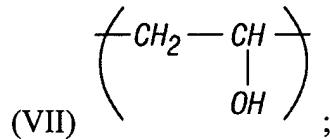
$-O-(CHR^5)_m-$; $-C(=O)-O-(CHR^5)_m-$; $-NH-(CHR^5)_m-$; $-O-C(=O)-(CHR^5)_m-$;
 $-C(=O)-NH-(CHR^5)_m-$; or $-C(=O)-O-CH(OH)-CH_2-O-$;

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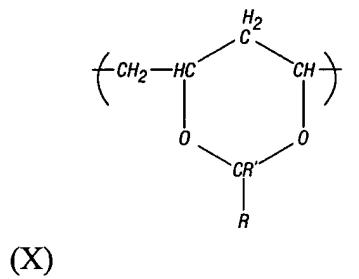
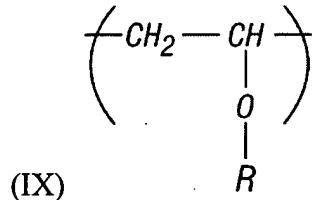
wherein each R⁵ is independently selected from hydrogen, methyl, ethyl, propyl, or butyl; n is an integer from 0 to 4, inclusive; and m is an integer from 0 to 12, inclusive.

35. The packaging article of claim 29, wherein the oxidizable polymer comprises

5 structure VII:



and at least one structure comprising structure IX or structure X:



10 wherein -R can independently comprise an unsubstituted hydrocarbon moiety comprising at least one alpha hydrogen or a substituted hydrocarbon moiety comprising at least one alpha hydrogen, and R' can independently comprise hydrogen, an unsubstituted hydrocarbon moiety or a substituted hydrocarbon moiety.

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36. The packaging article of claim 21, further comprising at least one oxygen barrier layer.

20 37. The packaging article of claim 36, wherein the oxygen barrier layer comprises at least one polymer comprising poly(ethylene vinyl alcohol) (EVOH), ethylene/vinyl acetate copolymer, ethylene/styrene copolymer, polyacrylonitrile, polyvinyl chloride

(PVC), poly(vinylidene dichloride), polyethylene terephthalate (PET), polyethylene naphthalate, or polyamide.

38. The packaging article of claim 21, wherein the packaging article is in the form of
5 a single layer film, a multilayer film, a single layer semi-rigid article, a multilayer semi-rigid article, a single layer rigid article, or a multilayer rigid article.

39. The packaging article of claim 21, wherein at least one of a liner, coating, sealant, gasket, adhesive insert, non-adhesive insert, or fibrous mat insert of the packaging article
10 comprises the oxygen scavenging layer.

40. An oxygen scavenging composition, comprising:
at least one of poly(ethylene/vinyl cyclohexene) (EVCH), ethylene/methyl acrylate/cyclohexenyl methyl acrylate terpolymer (EMCM), poly(cyclohexene methyl
15 methacrylate) (CHMA), or poly(cyclohexene methyl acrylate) (CHAA), and
at least one of cobalt behenate or cobalt arachidate.

41. A packaging article, comprising:
an oxygen scavenging layer comprising (a) at least one metal catalyzed oxidizable
20 polymer, and (b) at least one of cobalt behenate or cobalt arachidate.

42. The packaging article of claim 41, wherein the metal catalyzed oxidizable polymer comprises poly(ethylene/vinyl cyclohexene) (EVCH), ethylene/methyl acrylate/cyclohexenyl methyl acrylate terpolymer (EMCM), poly(cyclohexene methyl
25 methacrylate) (CHMA), and poly(cyclohexene methyl acrylate) (CHAA)

43. A packaging article, comprising:
an oxygen scavenging layer comprising at least one metal catalyzed oxidizable organic compound, and
30 a second layer adjacent to the oxygen scavenging layer comprising at least one transition metal carboxylate, wherein the transition metal carboxylate comprises at least

one carboxylate group and wherein each carboxylate group comprises between 20 and 30 carbon atoms, inclusive.

44. A packaging article, comprising:

5 an oxygen scavenging layer comprising at least one metal catalyzed oxidizable organic compound, and

a second layer adjacent to the oxygen scavenging layer comprising at least one of cobalt behenate or cobalt arachidate.